

Amendments to the Drawings:

The attached drawing sheet(s) include changes to Figure(s) 1A, 1B, and 2. In Figures 1A and 1B, the "Prior Art" legend has been included. Applicant respectfully submits that the amended Figures 1A and 1B overcome the objection. Figure 2 has also been amended to change the reference label 270₁ to 270. Also, the specification has been amended to change the reference label 260₁ to 260. Accordingly, Applicant respectfully requests that the objections to Figures 1A, 1B, and 2 be withdrawn.

REMARKS

Applicant respectfully requests reconsideration of this application in view of the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in substantially the same order in which the corresponding issues were raised in the Office Action.

Status of the Claims

Claims 1-22 are pending. Claims 1, 2, 11, 12, 17, and 20 are currently amended to more clearly define pre-existing claim limitations. No claims are canceled. No claims are added. No new matter has been added.

Summary of the Office Action

Claims 2 and 17 stand objected to because of informalities.

Claims 17-19 stand objected to as depending from a rejected independent claim, but would be allowable if rewritten in independent form to include all intervening claim limitations.

Claims 1-8, 11, 13, 14, and 20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 2003/0093752 to Chen (hereinafter "Chen")

Claims 9, 10, 12, 15, 16, 21, and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen in view of Programmable Framer Chip Improves OC-48 Efficiency by Louis E. Frenzel (hereinafter "Frenzel").

Response to Objections

The drawings stand objected to because Figures 1A and 1B should be designated by a legend such as "Prior Art." Applicant respectfully submits that Figures 1A and 1B have been amended to include the legend "Prior Art," as suggested by the Examiner. Applicant respectfully requests that the objection to the drawings be withdrawn.

The Examiner also points out that there are certain reference numbers in the specification that do not correspond directly with the figures. Applicant respectfully submits that the specification has been amended clarify certain reference numbers to

correspond directly with the Figures. Applicant respectfully requests that the objection to the drawings be withdrawn.

The specification stands objected to because there is no brief summary of invention section after the background. The Office Action requested that Applicants add a "Summary of the Invention" description to the application. However, Applicants would like to kindly point out that both the M.P.E.P. and 37 C.F.R. §1.73 do not require the presence of a "Summary of the Invention" in a patent application. They merely indicate where in the application the "Summary of the Invention" should be placed if Applicants were to elect to include one. In particular, 37 C.F.R. §1.73 only states that "[a] brief summary of the invention ... should precede the detailed description." 37 CFR § 1.73 does not state "must" or "shall." Accordingly, Applicants have elected not to include a "Summary of the Invention" as this is within the discretion of Applicants. Accordingly, Applicant respectfully requests that the objection to the specification be withdrawn.

Claims 2 and 17 stands objected to because of informalities. Applicant respectfully submits that claims 2 and 17 have been amended and respectfully requests that the objection to claims 2 and 17 be withdrawn.

Response to Rejections under 35 U.S.C. § 102(e)

The Office Action rejected claims 1-8, 11, 13, 14 and 20 under 35 U.S.C. § 102(e) as being anticipated by Chen. Applicant respectfully requests withdrawal of these rejections because the cited reference fails to disclose all of the limitations of the claims.

CLAIMS 1-10

Claim 1 stands rejected under 35 U.S.C. § 102(e) as being anticipated by Chen. Applicant respectfully submits that claim 1 is patentable over the cited reference because Chen does not disclose all of the limitations of the claim. Claim 1, as amended, recites:

An apparatus, comprising:

a cycle redundancy check (CRC) calculator; and
a CRC nullifier coupled to the CRC calculator, **wherein the CRC calculator and the CRC nullifier are configured to determine a CRC value over an input data stream whose width is less than the width of an input data bus of the CRC calculator, and wherein the CRC value is determined by a reverse exclusive OR (XOR) operation on each of the bits received from the CRC calculator using the CRC nullifier**

when the current transfer contains an End of Packet (EOP) character.
(Emphasis added).

Applicant respectfully submits that Chen fails to disclose all of the limitations of the claim. In particular, Chen does not disclose that the CRC calculator and the CRC nullifier are configured to determine a CRC value over an input data stream whose width is less than the width of an input data bus of the CRC calculator or that the CRC value is determined by a reverse exclusive-or operation on each of the bits received from the CRC calculator using the CRC nullifier when the current transfer contains an End of Packet character.

Chen is directed to a universal N-bit capable CRC generator that is programmable to adapt to any given polynomial key word. Chen, Abstract. The N-bit capable CRC generator may include N shift registers that are associated with corresponding exclusive-OR gates (XOR gates), and each of the shift registers corresponds to a term of an imaginary Nth order polynomial. Chen, Abstract. The N-bit capable CRC generator can be converted into a specific polynomial key word CRC generator by nullifying a subset of the shift registers and their corresponding XOR gates. Chen, Abstract. In particular, Chen discloses that programmable registers, Y registers, are programmed based on the given polynomial key word. The given polynomial key word is compared to the general Nth order polynomial to determine which of the coefficients are to take the value of zero in order to convert the Nth order general polynomial into the given polynomial key word. Chen, paragraphs [0052]-[0057]. However, Chen does not disclose that the CRC generator determines a CRV value over an input data stream whose width is less than the width of an input data bus of the CRC generator.

Moreover, even if for the sake of argument, Chen were to disclose that the CRC generator determines a CRV value over an input data stream whose width is less than the width of an input data bus of the CRC generator, Chen does not disclose that the CRC value is determined by a reverse XOR operation on each of the bits received from the CRC calculator using the CRC nullifier when the current transfer contains an End of Packet (EOP) character.

In contrast, claim 1 recites “wherein the CRC calculator and the CRC nullifier are configured to determine a CRC value over an input data stream whose width is less than

the width of an input data bus of the CRC calculator, and wherein the CRC value is determined by a reverse exclusive-or (XOR) operation on each of the bits received from the CRC calculator using the CRC nullifier when the current transfer contains an End of Packet (EOP) character.” For the reasons stated above, Chen fails to disclose all of the limitations of claim 1. Given that the cited reference fails to disclose all of the limitations of the claim, Applicant respectfully submits that claim 1 is patentable over the cited reference. Accordingly, Applicant requests that the rejection of claim 1 under 35 U.S.C. § 102(e) be withdrawn.

Given that claims 2-10 depend from independent claim 1, which is patentable over the cited reference, Applicant respectfully submits that dependent claims 2-10 are also patentable over the cited reference. Accordingly, Applicant requests that the rejection of claims 2-8 under 35 U.S.C. § 102(e) and the rejection of claims 9-10 under 35 U.S.C. § 103(a) be withdrawn.

CLAIMS 11-19

Claim 11 stands rejected under 35 U.S.C. § 102(e) as being anticipated by Chen. Applicant respectfully submits that claim 11 is patentable over the cited reference because Chen does not disclose all of the limitations of the claim. Claim 11, as amended, recites:

A method, comprising:

receiving data on an input data bus having a N byte width, where N is greater than one; and

passing the data from the input data bus to a cycle redundancy check (CRC) computation circuitry having a CRC calculator and at least one nullifier;

computing a CRC value over the input data bus width using the CRC calculator;

determining if the current transfer contains an End of Packet (EOP) character;

feeding the calculated CRC value back as an old CRC value to the CRC calculator if the current transfer does not contain the EOP character; and

feeding the calculated CRC value to the at least one nullifier if the current transfer does contain the EOP character. (Emphasis added).

Applicant respectfully submits that Chen fails to disclose all of the limitations of the claim. In particular, Chen does not disclose determining if the current transfer contains an End of Packet (EOP) character.

As described above, Chen is directed to a universal N-bit capable CRC generator that is programmable to adapt to any given polynomial key word. Chen, Abstract. The N-bit capable CRC generator can be converted into a specific polynomial key word CRC generator by nullifying a subset of the shift registers and their corresponding XOR gates. Chen, Abstract. However, nothing in Chen discloses determining if the current transfer contains an EOP character.

In contrast, claim 11 recites “determining if the current transfer contains an End of Packet (EOP) character.” For the reasons stated above, Chen fails to disclose all of the limitations of claim 11. Given that the cited reference fails to disclose all of the limitations of the claim, Applicant respectfully submits that claim 11 is patentable over the cited reference. Accordingly, Applicant requests that the rejection of claim 11 under 35 U.S.C. § 102(e) be withdrawn.

Given that claims 12-19 depend from independent claim 11, which is patentable over the cited reference, Applicant respectfully submits that dependent claims 12-19 are also patentable over the cited reference. Accordingly, Applicant requests that the rejection of claims 13 and 14 under 35 U.S.C. § 102(e) and the rejection of claims 12, 15, 16, 21, and 22 under 35 U.S.C. § 103(a) be withdrawn.

CLAIMS 20-22

Claim 20 stands rejected under 35 U.S.C. § 102(e) as being anticipated by Chen. Applicant respectfully submits that claim 20 is patentable over the cited reference for similar reasons describe above with respect to claim 11. Given that the cited reference fails to disclose all of the limitations of the claim, Applicant respectfully submits that claim 20 is patentable over the cited reference. Accordingly, Applicant requests that the rejection of claim 20 under 35 U.S.C. § 102(e) be withdrawn.

Given that claims 21-22 depend from independent claim 20, which is patentable over the cited reference, Applicant respectfully submits that dependent claims 21-22 are

also patentable over the cited reference. Accordingly, Applicant requests that the rejection of claims 21 and 22 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

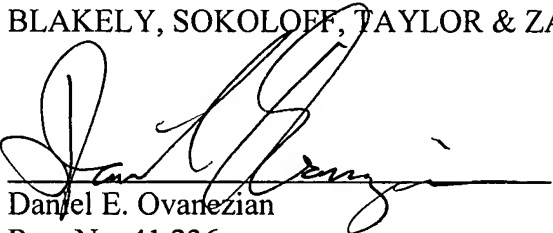
It is respectfully submitted that in view of the amendments and remarks set forth herein, the rejections and objections have been overcome. If the Examiner believes a telephone interview would expedite the prosecution of this application, the Examiner is invited to contact Daniel Ovanezian at (408) 720-8300.

If there are any additional charges, please charge them to Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 4/6/07


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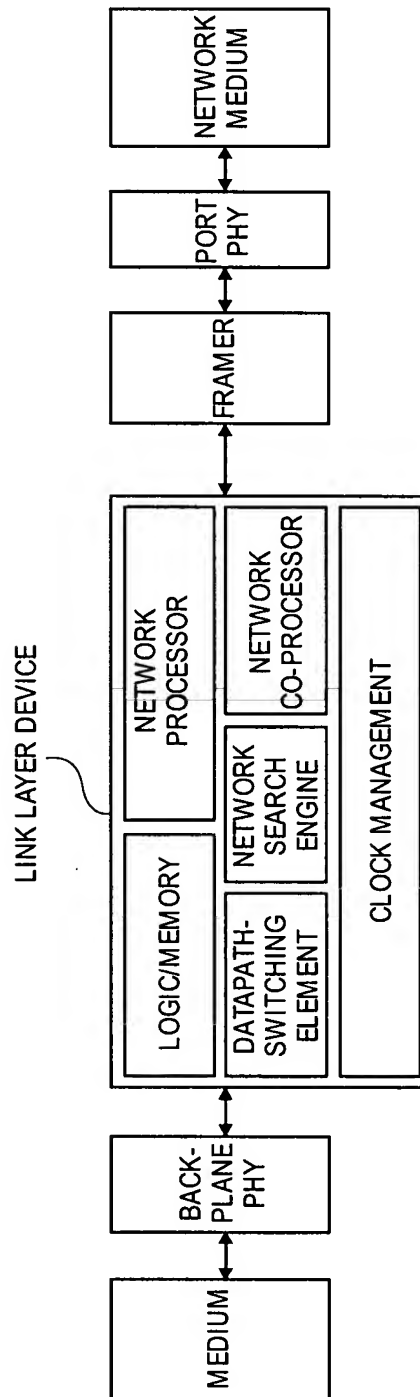


FIG. 1A
(PRIOR ART) *added*

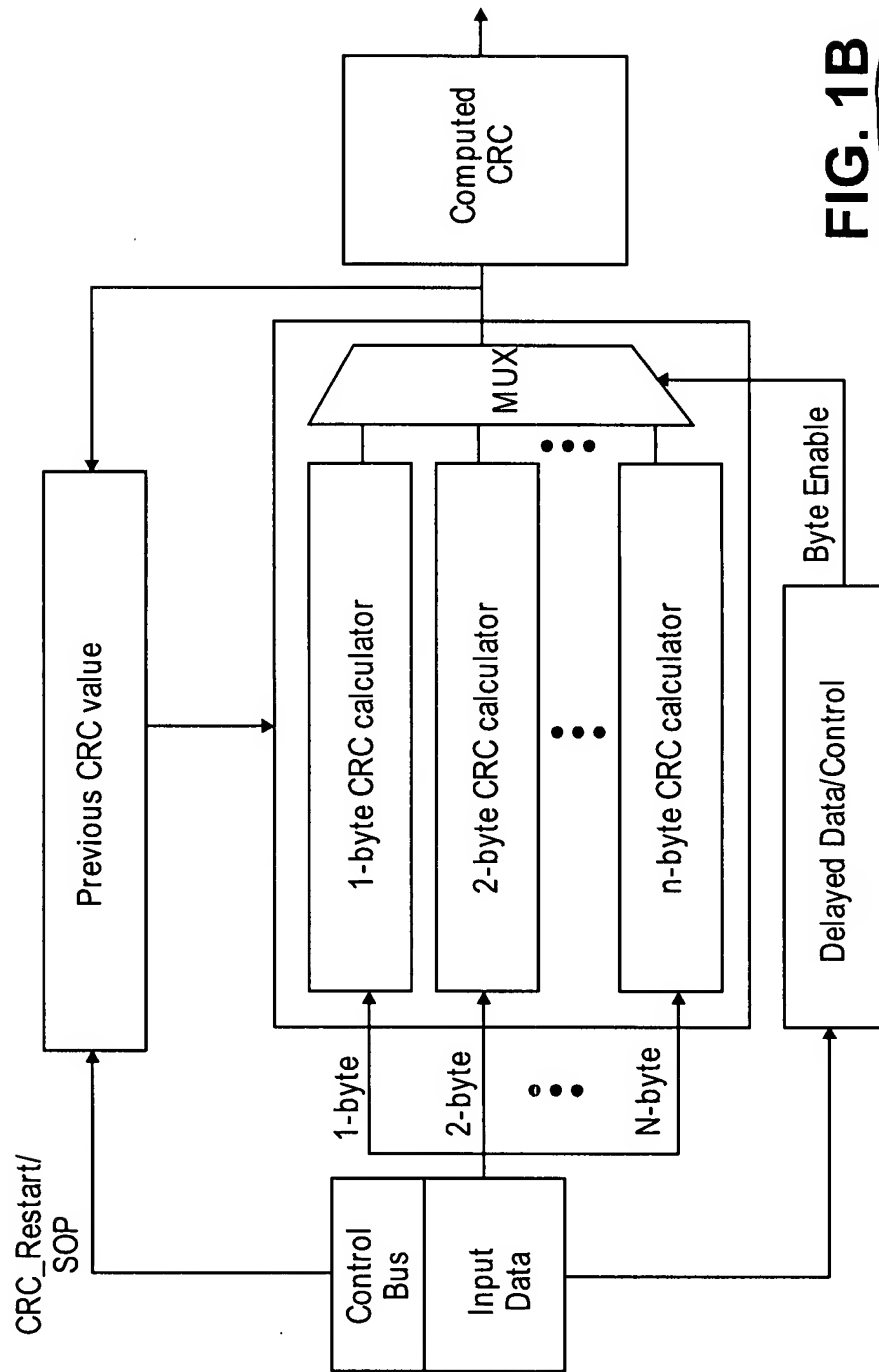


FIG. 1B

(PRIOR ART)

added

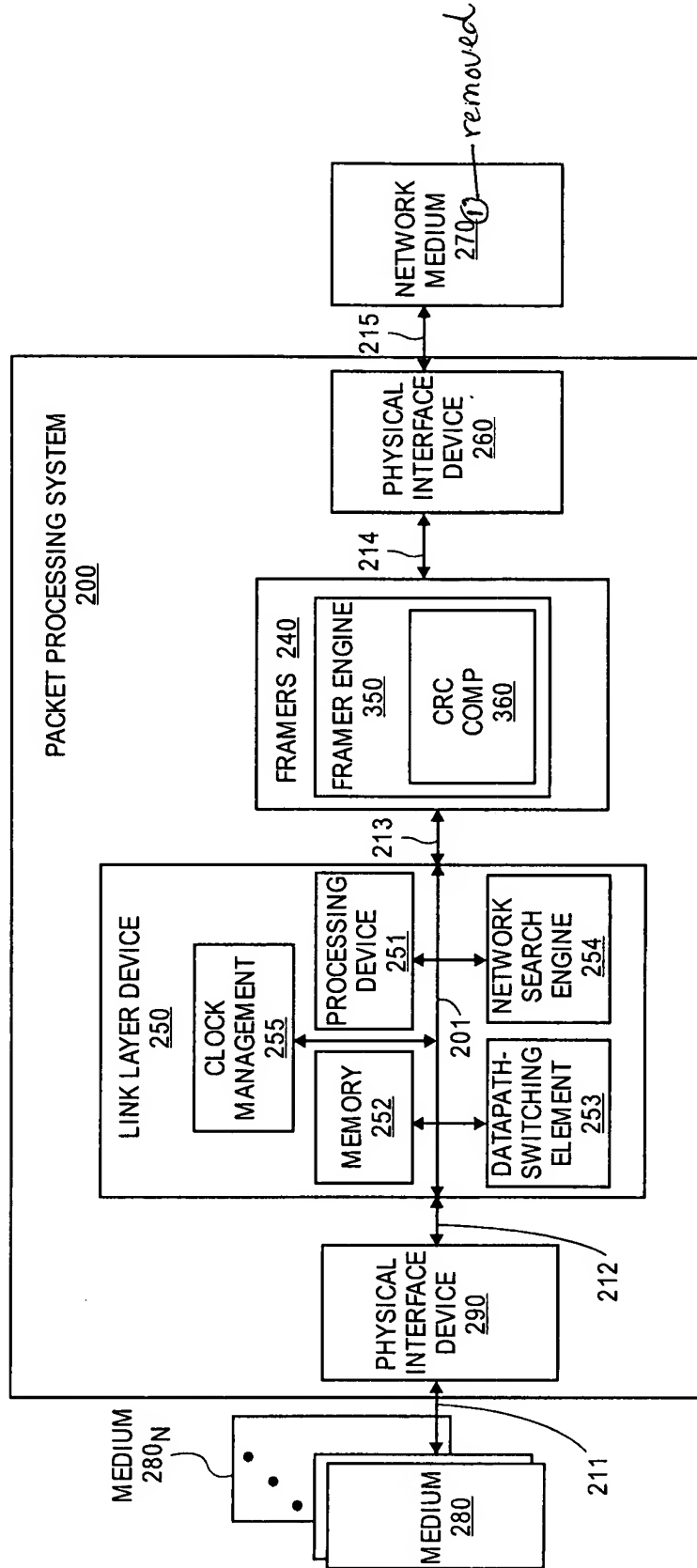


FIG. 2